Name: Date:

Exam: Function Reflections (Practice version 19)

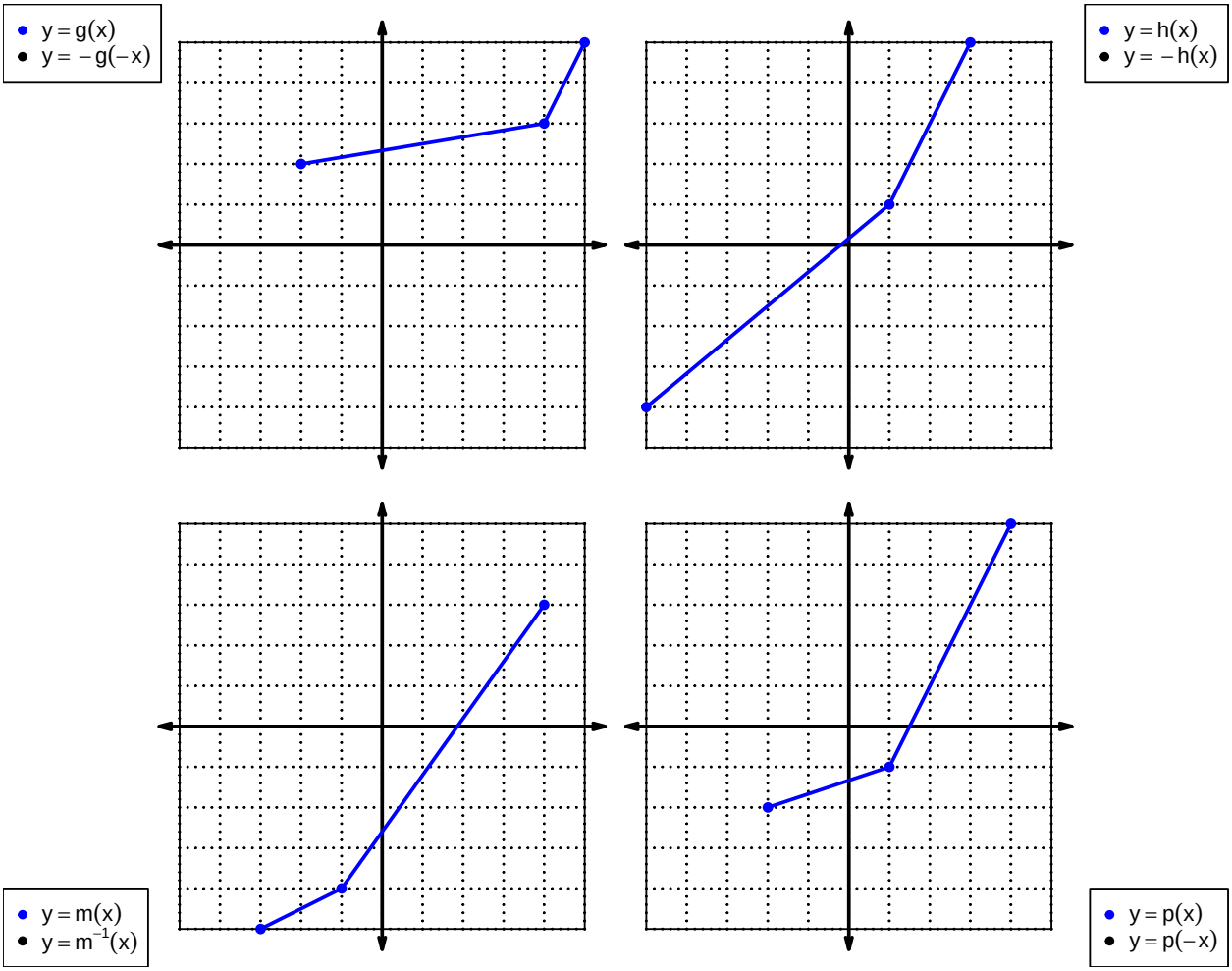
1. Let function f be defined by the polynomial below:

$$f(x) = -3x^4 - 7x^3 - 4x^2 - 6x - 9$$

Draw lines that match each function reflection with its polynomial:

Reflections	Polynomials
$f(-x)$	$3x^4 - 7x^3 + 4x^2 - 6x + 9$
$-f(-x)$	$3x^4 + 7x^3 + 4x^2 + 6x + 9$
$-f(x)$	$-3x^4 + 7x^3 - 4x^2 + 6x - 9$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.



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For all questions on this page, the functions f, g, and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	9	5	6
2	1	9	4
3	7	2	1
4	5	7	3
5	2	4	7
6	3	8	9
7	8	1	2
8	6	6	5
9	4	3	8

3. Evaluate $h(3)$.

4. Evaluate $f^{-1}(4)$.

5. By filling more rows of the table, it is possible to make function f **even**. If that were done, what would be the value of $f(-8)$?

6. By filling more rows of the table, it is possible to make function g **odd**. If that were done, what would be the value of $g(-7)$?

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7. A function, f, is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g, is **odd** if $g(x) = -g(-x)$ for all x in the domain.
   Let polynomial p be defined with the following equation:

$$p(x) \;=\; x^2 - 1$$

   a. Express $p(-x)$ as a polynomial in standard form.

   b. Express $-p(-x)$ as a polynomial in standard form.

   c. Is polynomial p even, odd, or neither?

   d. Explain how you know the answer to part c.

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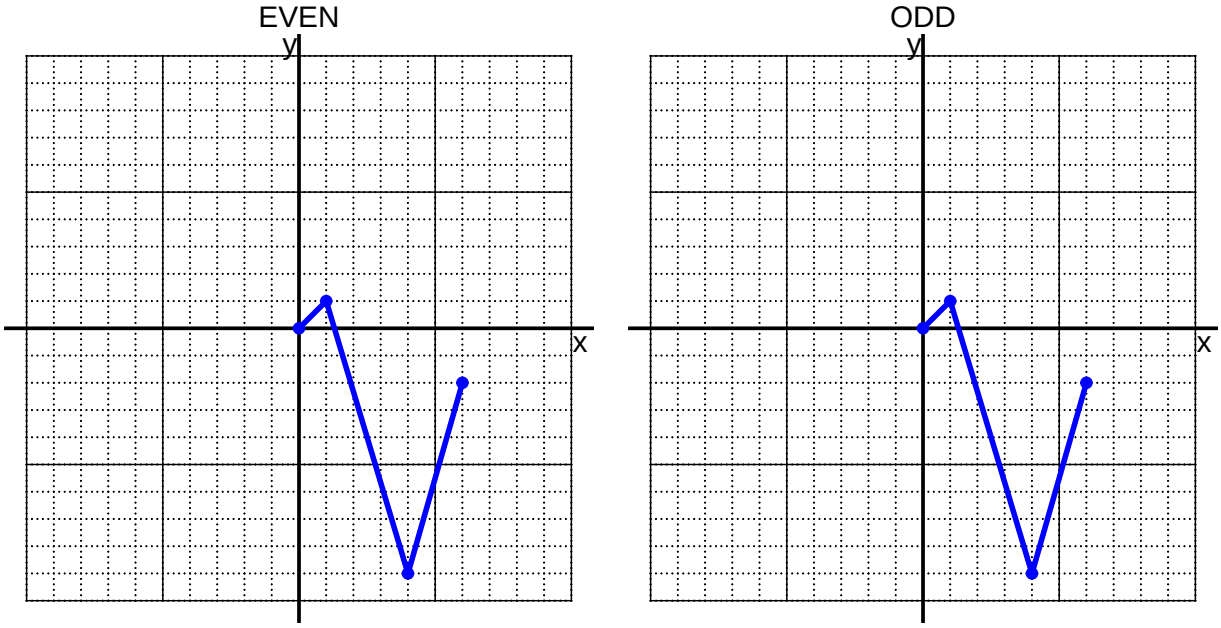
8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

$$f(x) \;=\; 9(x-2)$$

a. Evaluate $f(10)$.

b. Evaluate $f^{-1}(36)$.

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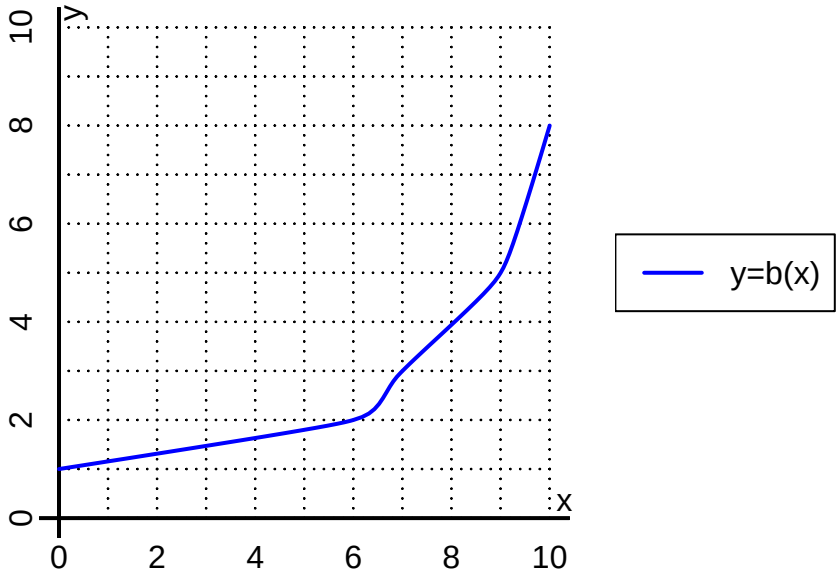
10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(7)$.

b. Evaluate $b^{-1}(2)$.

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11. Function f is defined by the table below.

    a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	5			
-1	-3			
0	0			
1	3			
2	-5			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?